



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/002,915	10/23/2001	Yeong-Taeg Kim	SAM2.005	5069

7590 03/25/2004

SHERMAN & SHERMAN
Seventeenth Floor
2029 Century Park East
Los Angeles, CA 90067

EXAMINER

YENKE, BRIAN P

ART UNIT	PAPER NUMBER
----------	--------------

2614

DATE MAILED: 03/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/002,915

Applicant(s)

KIM ET AL.

Examiner

BRIAN P. YENKE

Art Unit

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,3,6-10,14 and 16 is/are rejected.
- 7) ☒ Claim(s) 2,4,5,11-13 and 15 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3, 6, 7-10 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Jiang et al., US 2002/0027610.

In considering claims 1, 3 and 9-10,

a) *the claimed inputting a video signal...* is met by input 101, which receives an interlaced video signal (Fig 1).

Art Unit: 2614

b) the claimed comparing mutually corresponding fields and defining a point-wise non-recursive motion decision parameter is met by motion detection 109 (Fig 1), which computes the motion metrics, which includes points between a previous field and a next field (Fig 3). The specification defines the "non-recursive" as motion detection from a few number of fields (i.e. $x(n-1)$ and $x(n+1)$ or $x(n)$ and $x(n-2)$), thus although Jiang does not recite the term "non-recursive", Jiang does detect motion as described in the applicant's specification which defines "non-recursive".

c) the claimed computing a recursive motion detection signal... is met by motion detection 109 (Fig 1), which computes the motion metrics, which includes all the motion metrics computed (Δn , Δc , Δs , Δb) (page 2, para 28-34). The specification defines "recursive" as motion detection parameters which utilize the motion detection from previous fields, thus although Jiang does not explicitly recite "recursive", Jiang does perform recursive motion detection since Jiang utilizes the motion detection from 4 fields.

d) the claimed outputting the recursive motion decision parameter... is met where the motion metrics computed by motion detector 109 are filtered via spatial median filter 110 and then LUT 111 obtains the weight (blending factor), for frame or field interpolation.

In considering claim 6,

a) the claimed spatially interpolating a value of the video signal... is met by frame interpolator 105 (Fig 1)

b) the claimed temporally interpolating the value of the video signal... is met by field interpolator 106 (Fig 1).

c) the claimed forming a recursive motion decision value... (refer to rejection of claim 1/c, above).

d) the claimed mixing an output signal... is met by alpha blender 112 (Fig 1) where the blending of the video signal is based upon the motion value determines the blending of the field and/or frame interpolation (page 3, Para 40-44).

In considering claims 7-8,

Jiang discloses that based upon the motion metric value, which varies between 0 and 1, (page 3, Para 42) determines the blending factor of the interpolation methods. As shown in Fig 5, when there is little or no motion (motion metric value = 0) the field (temporal) interpolation is used, where there is high or maximum motion (motion metric value = 1) the frame (spatial) interpolation is used.

In considering claim 16,

a) the claimed an input... is met by input 101, which receives an interlaced video signal (Fig 1).

b) the claimed spatially interpolating a value of the video signal... is met by frame interpolator 105 (Fig 1)

c) the claimed temporally interpolating the value of the video signal... is met by field interpolator 106 (Fig 1).

d) the claimed an apparatus according to claim 9...(refer to rejection of claim 9, above).

It is also noted that the motion detection is carried out in parallel with the spatial (frame) and temporal (field) interpolation.

*e) the claimed a mixer...*is met by alpha blender 112 (Fig 1) where the blending of the video signal is based upon the motion value determines the blending of the field and/or frame interpolation (page 3, Para 40-44).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over, Jiang et al., US 2002/0027610.

In considering claim 14,

Regarding the use of a LPF connected to an output the recursive motion detection unit.

Jiang does disclose the use of a LPF 108 (Fig 1), however Jiang does not explicitly disclose the use of a LPF prior to outputting.

However, the use of a filter (LPF), which is used to filter a signal, whether at the input, output or in-between is a matter of design choice, based upon the size of the

Art Unit: 2614

system, the type/quality of the signal inputted/output and thus bares no patentable weight.

Allowable Subject Matter

4. Claims 2, 4-5, 11-13 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Yenke whose telephone number is (703) 305-9871. The examiner work schedule is Monday-Thursday, 0730-1830 hrs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, John W. Miller, can be reached at (703)305-4795.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist). Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is

Art Unit: 2614

(703)305-HELP.

General information about patents, trademarks, products and services offered by the United States Patent and Trademark Office (USPTO), and other related information is available by contacting the USPTO's General Information Services Division at:

800-PTO-9199 or 703-308-HELP

(FAX) 703-305-7786


(TDD) 703-305-7785

An automated message system is available 7 days a week, 24 hours a day providing informational responses to frequently asked questions and the ability to order certain documents. Customer service representatives are available to answer questions, send materials or connect customers with other offices of the USPTO from 8:30 a.m. - 8:00p.m. EST/EDT, Monday-Friday excluding federal holidays.

For other technical patent information needs, the Patent Assistance Center can be reached through customer service representatives at the above numbers, Monday through Friday (except federal holidays) from 8:30 a.m. to 5:00 p.m. EST/EDT.

General information brochures can also be obtained in person from the Patent Search Room located in Crystal Plaza 3, Room 1A03, 2021 South Clark Place, Arlington, VA 22202.

The Patent Electronic Business Center (EBC) allows USPTO customers to retrieve data, check the status of pending actions, and submit information and applications. The tools currently available in the Patent EBC are Patent Application Information Retrieval (PAIR) and the Electronic Filing System (EFS). PAIR (<http://pair.uspto.gov>) provides customers direct secure access to their own patent application status information, as well as to general patent information publicly available. EFS allows customers to electronically file patent application documents securely via the Internet. EFS is a system for submitting new utility patent applications and pre-grant publication submissions in electronic publication-ready form. EFS includes software to help customers prepare submissions in extensible Markup Language (XML) format and to assemble the various parts of the application as an electronic submission package. EFS also allows the submission of Computer Readable Format (CRF) sequence listings for pending biotechnology patent applications, which were filed in paper form.


BRIAN P. YENKE
Primary Examiner
Art Unit 2614


B.P.Y.
18 March 2004